Because learning changes everything.®

Chapter 15

Innovating and Changing

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Learning Objectives

LO 1 Summarize how technology fuels innovation.

LO 2 Identify the criteria on which to base technology decisions.

LO 3 Compare key ways of acquiring new technologies.

LO 4 Evaluate the elements of an innovative organization.

LO 5 Discuss what it takes to be world-class.

LO 6 Describe how to lead change effectively.

LO 7 Describe strategies for creating a successful future.

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Introduction

Innovating and Changing

Coping with current challenges and creating the best possible futures will require:

- Bold and ethical leadership.
- Dynamic strategic planning.
- New forms of intelligent and flexible organization.
- Sound control systems.

Managing change continues to increase in importance.

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Deciding To Adopt New Technology [1]

Fundamental Types of Innovation

- Product innovation is a change in the outputs the organization produces.
- Process innovation is a change in the way outputs are produced.
- Business model innovation is a change in how the organization uses existing technologies and processes to deliver its current products in a more productive and profitable manner.

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Deciding To Adopt New Technology 2

Forces Driving Technological Development

1. There must be a *need*, or *demand*, for the technology.
2. Meeting the need must be theoretically possible, and the *knowledge* to do so must exist.
3. Must be able to *convert* relevant scientific knowledge into practice in both engineering and economic terms.
4. Necessary *funding, skilled labor, time, space*, and *other resources* needed to develop the technology must be available.
5. *Entrepreneurial initiatives* must identify and pull all the necessary elements together.

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Technology Life Cycle

Innovations follow a predictable pattern:

- Product innovation is highest in the early stages.
- Development slows and becomes costlier as market saturates.

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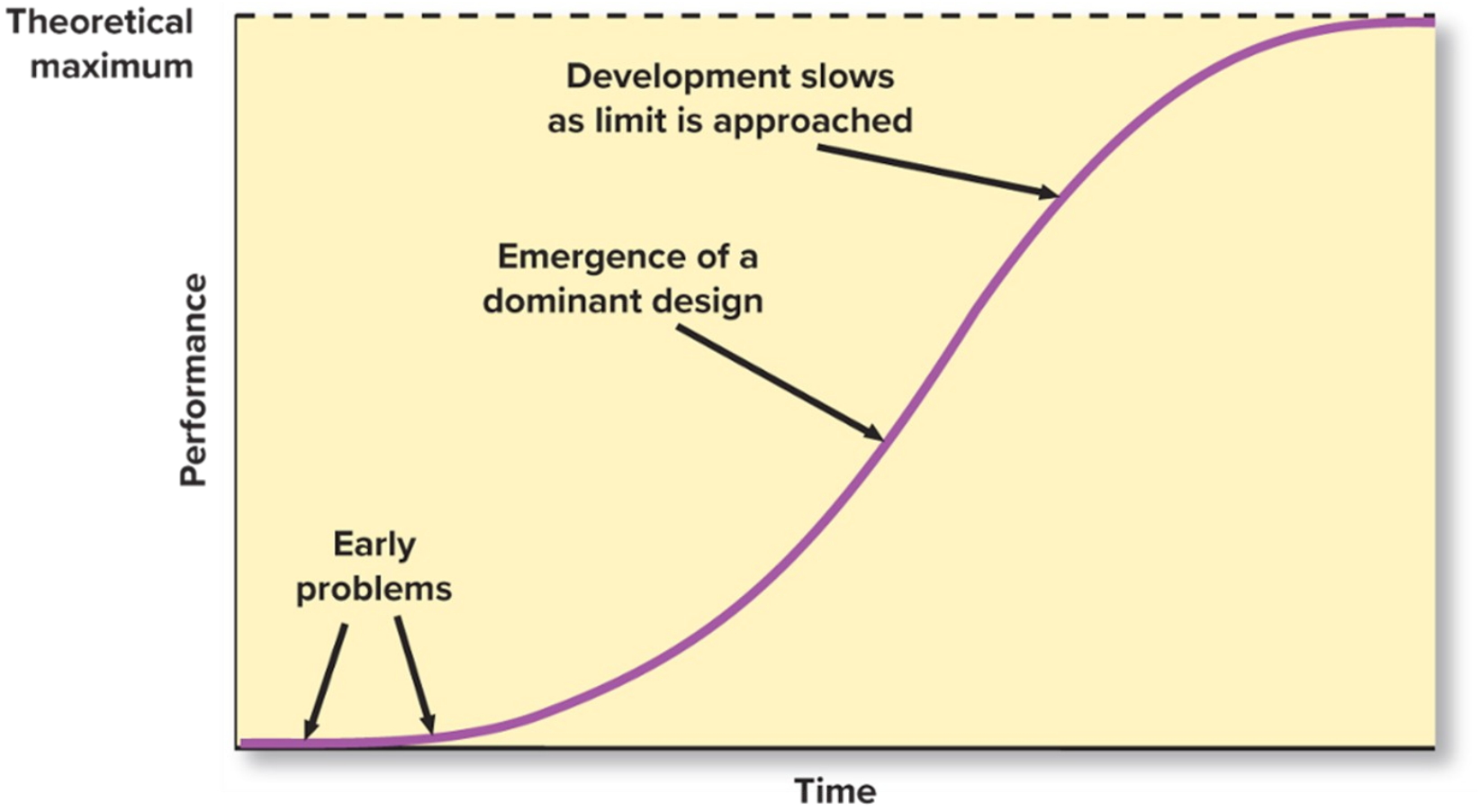
Exhibit 15.1 The Technology Life Cycle



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Deciding When to Adopt New Technology

- Innovators are first group to adopt.
- Early adopters are next group to adopt.
- Early majority take longer to use something new.
- Late majority approach innovation with caution.
- Laggards are highly suspicious of innovation and change.

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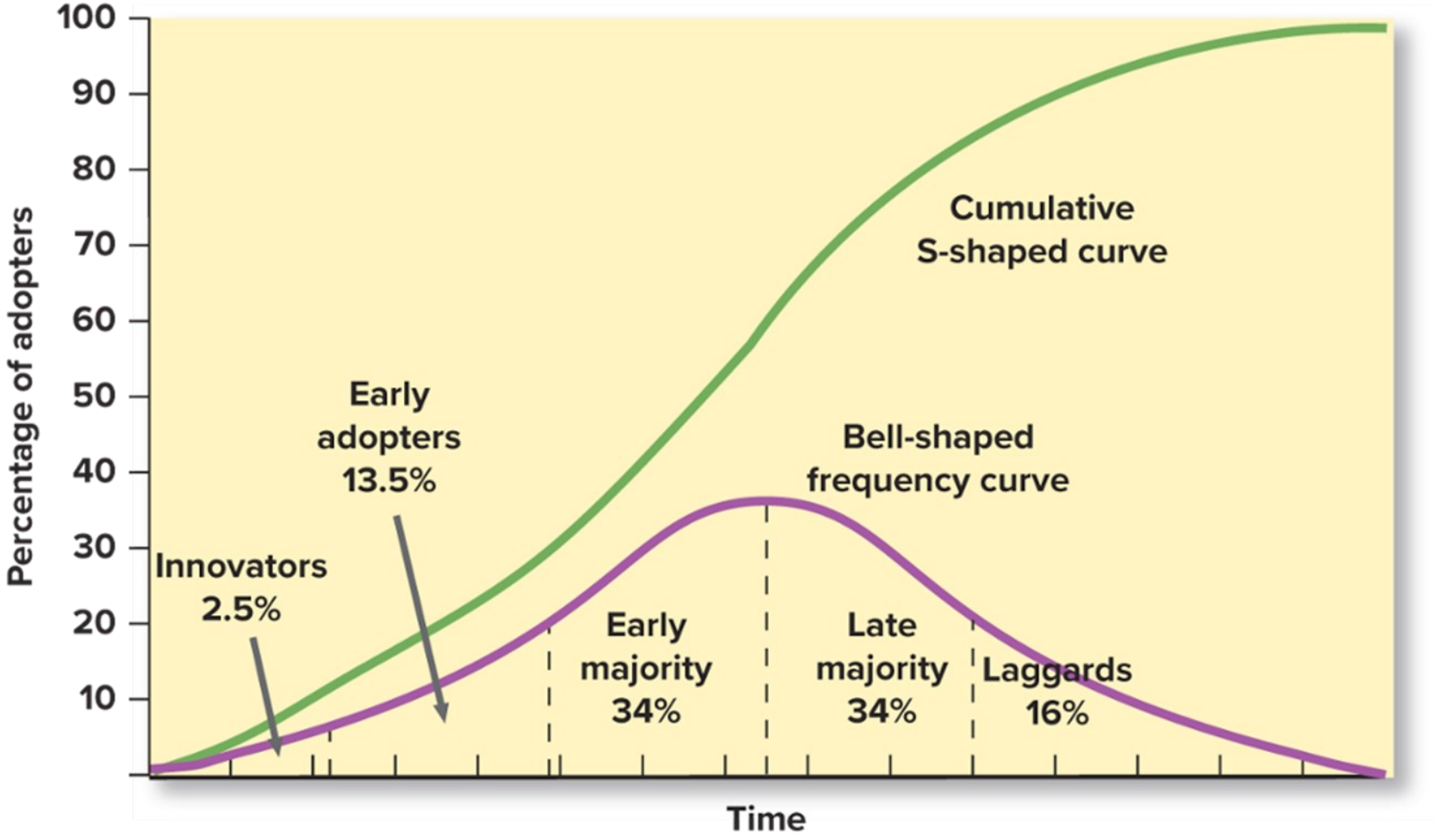
Exhibit 15.2 Technology Dissemination Pattern and Adopter Categories



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Being a Technology Leader

Change is not easy or natural.

Innovations can support positioning strategies:

- Low-cost
- Differentiation.

Sometimes Innovative Technology Is Disruptive

- **Disruptive innovation** occurs when product, service, or business model takes root in simple applications and takes over the market.
- Managers face innovator's dilemma.

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First-Mover Advantages

- Higher prices.
- Little or no competition.
- Greater efficiency.

First-Mover Disadvantages

- Greater risk.
- Cost and problems of technology development.
- Costs of market development and customer education.

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Sometimes Following Is the Best Option

Not all companies are prepared to be innovation leaders.

Managers must consider:

- Company’s competitive strategy.
- Benefits to be gained.
- Characteristics of the organization.

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Measuring Current Technologies

A **technology audit** is the process of clarifying the key technologies on which an organization depends.

- Emerging technologies: under development, but change the rules of future competition.
- Pacing technologies: potential to alter the rules of competition.
- Key technologies: effective but provide advantage because not everyone knows or uses them.
- Base technologies: commonplace in the industry.

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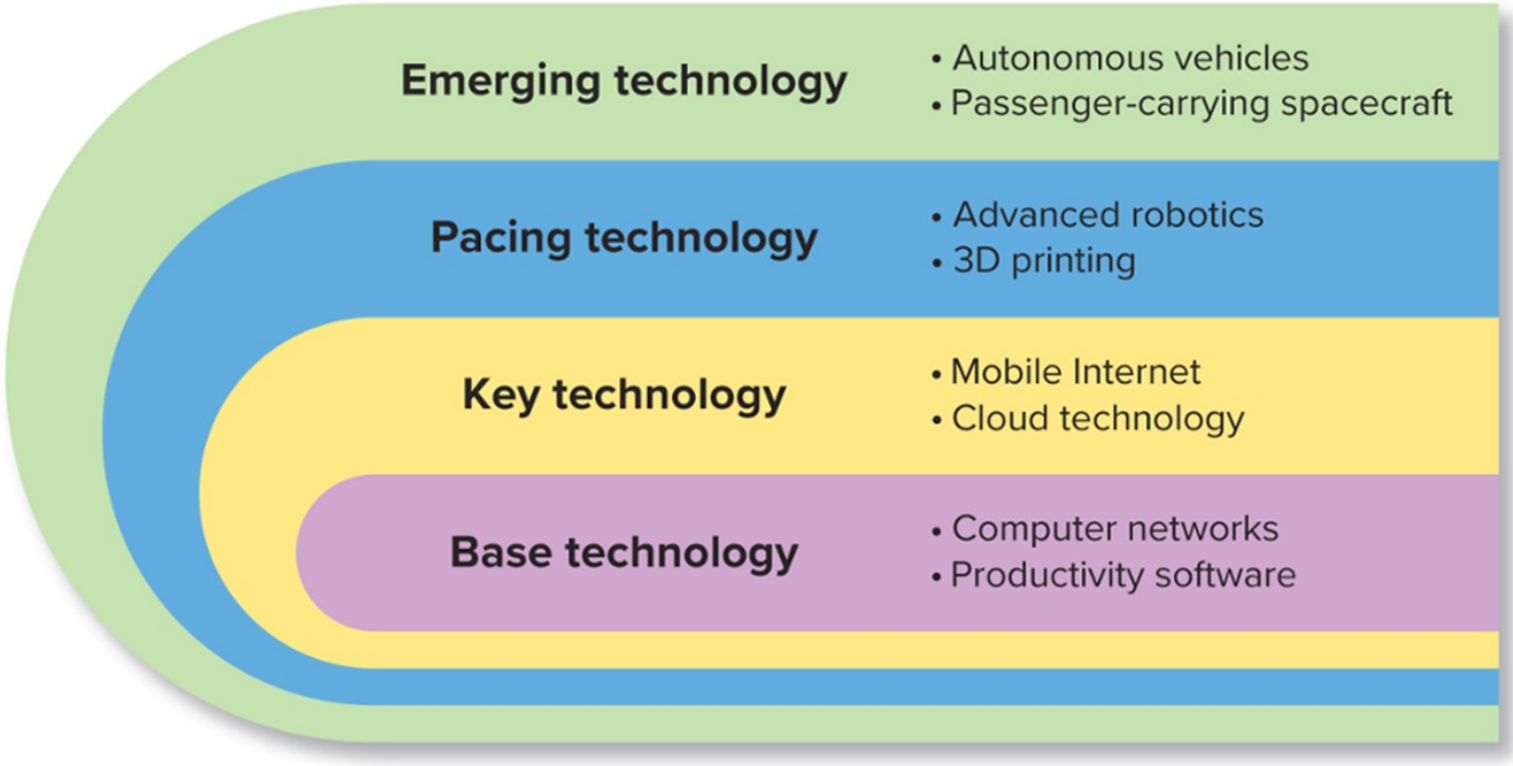
Exhibit 15.4 Technology Categories with Examples



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Sources: Adapted from R. E. Oligney and M. I. Economides, "Technology as an Asset," *Hart's Petroleum Engineer International* 71, no. 9 (September 1998), p. 27; "The Driverless, Car-Sharing Road Ahead," *The Economist*, January 9, 2016, www.economist.com; C. MacKechnie, "What Are the Types of Business Technology?" *Chron*, http://smallbusiness.chron.com; and J. Manyika, M. Chul, J. Bughin, R. Dobbs, P. Bisson, and A. Marrs, "Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy," *McKinsey & Company Report*, May 2013, www.mckinsey.com.

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Base Technology Decisions on Relevant Criteria [1]

Anticipated Market Receptiveness

- What is market potential, both in short run and long run?

Technological Feasibility

- Are innovations feasible?

Economic Viability

- Is there a good financial incentive?

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Analyzing Cost vs. Benefit

Does an automobile need a driver?

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Base Technology Decisions on Relevant Criteria 2

Organizational Fit

- Prospector firms.
- Defender firms.
- Analyzer firms.
- Companies have different capabilities to deal with new technologies.
- Managers must also consider effects on employees.

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Know Where to Get New Technologies

Make-or-Buy Decision

- The question of whether an organization should acquire new technology from an outside source or develop it itself.

- Managers should ask these basic questions:

1. Is it important (and possible) in terms of competitive advantage that the technology remain proprietary?
2. Are the time, skills, and resources for internal development available?
3. Is the technology readily available outside the company?

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Exhibit 15.5 Advantages and Disadvantages of Make-or-Buy Technology Alternatives

Alternatives	Advantage(s)	Disadvantage(s)
Internal development	Technology is proprietary and provides competitive advantage.	Expensive, time-consuming.
Purchase	Simple to implement and cost-effective.	Does not provide competitive advantage.
Contracted development	Allows a firm without internal development capabilities to acquire technology.	Higher monitoring costs and risk that the technology eventually appears in marketplace.
Licensing	Permits firms to access unique technology for a fee; more economical than development.	Firm does not own or control the unique technology; it depends on another firm.
Technology trading	Speeds learning curve and reduces costly trial-and-error approach to using technologies.	Some information is not directly applicable, and not all industries are willing to share information.
Research partnerships and joint ventures	Two or more firms share costs.	Coordination costs can be high and organizational cultures can clash, limiting the outcomes.
Acquisition of a technology owner	Firm gains control and ownership.	Purchase can be expensive.

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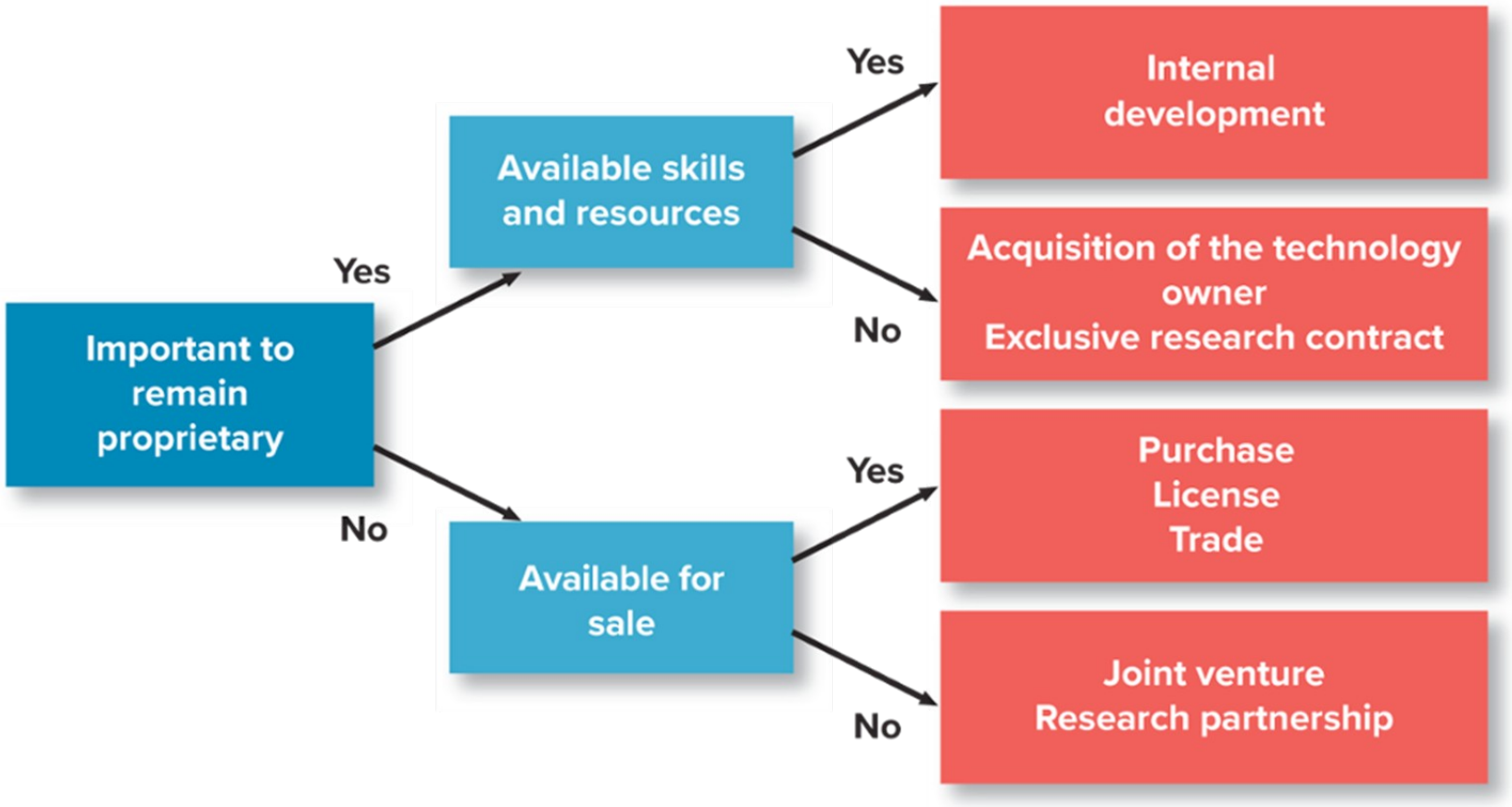
Exhibit 15.6 Technology Acquisition Options



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Organizing for Innovation 1

Successful Innovation

- Learning organizations are well-positioned to innovate.
- **Ambidexterity** is the ability of a company to exploit existing capabilities and explore new knowledge.

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Who Is Responsible for New Technology Innovations?

Key Roles

- Chief information officer (CIO) or chief technology officer (CTO).
- *Entrepreneur* invents new products or finds new ways to produce old products.
- *Technical innovator* develops or installs and operates the new technology.
- *Product champion* promotes idea throughout the organization, searching for support and acceptance.
- *Executive champion* has the status, authority, and financial resources to support the project and protect the product champion.

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Organizing for Innovation 2

To Innovate, Unleash Creativity

Some company cultures encourage innovation.

Celebrating failure can be vital to an innovation culture.

- Can prompt learning, growing, and succeeding.

Don't Let Bureaucracy Squelch Innovation

- Purpose of bureaucracy is to maintain order and efficiency.
- May need to create temporary project structures isolated from rest of organization.

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Organizing for Innovation 3

Development Projects Can Drive Innovation

A **development project** is a focused organizational effort to create a new product or process via technological advances.

- **Agile design**.

Job Design and Human Resources Make Innovation Possible

- Sociotechnical systems approach to work redesign.
- Technology, managed well, can empower workers as it strengthens organizations.

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Adapting to Dynamic Marketplace

Project FROG (Flexible Response to Ongoing Growth) wants to revolutionize the construction industry. The San Francisco–based company designs and sells modular components that assemble easily into energy-efficient, green buildings for uses including retail, health care, and classrooms.

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Becoming World-Class

World-Class Excellence

- Applying the best and latest knowledge and ideas.
- Being able to operate at the highest standards of any place anywhere.
- Being one of the very best at what you do.

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Build Companies for Sustainable, Long-Term Greatness

Companies with Long-Term Greatness

- Strong and consistent core values.
- Driven by goals, including stretch goals.
- Adapt continuously.
- Focus on beating themselves.

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Replace the "Tyranny of the *Or*" with the "Genius of the *And*"

Tyranny of the "Or"

- Belief that things must be either A or B and cannot be both.
- Beliefs (often invalid) that only one goal can be attained.

Genius of the "And"

- Ability to achieve multiple objectives at the same time.
- Strategic decisions at the top and actions of individuals throughout the organization.

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Don’t Just Change, Develop

Organization Development (OD)

System-wide application of behavioral science knowledge to develop, improve, and reinforce the strategies, structures, and processes that lead to organizational effectiveness.

- Aims to improve organizational effectiveness.
- Supports human potential, development, and participation.

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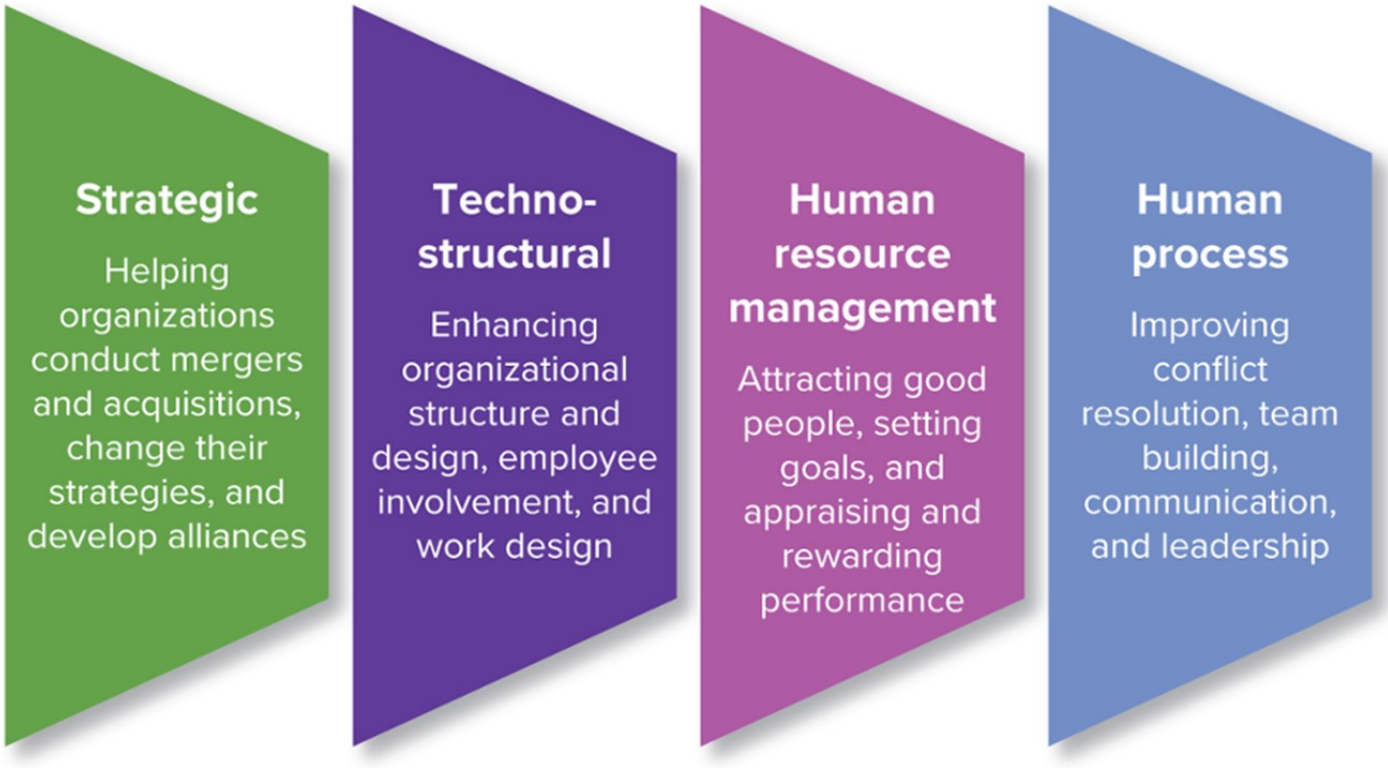
Exhibit 15.7 Four Basic Types of OD Interventions


Strategic
Helping organizations conduct mergers and acquisitions, change their strategies, and develop alliances
Techno-structural
Enhancing organizational structure and design, employee involvement, and work design
Human resource management
Attracting good people, setting goals, and appraising and rewarding performance
Human process
Improving conflict resolution, team building, communication, and leadership

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Source: Adapted from T. Cummings and C. Worley, *Organization Development and Change*, 8th ed. (Mason, OH: Thomson/South-Western, 2005)

Leading Change

Change

Change happens, constantly and unpredictably.

Requires shared leadership; people must be not just supporters of change but also implementers.

Must motivate people to:

- Keep adapting to new business challenges.
- Capitalize on new business challenges.

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Motivate People to Change

General Reasons for Resistance

- Inertia.
- Timing.
- Surprise.
- Peer pressure.

Change-Specific Reasons for Resistance

- Self-interest.
- Misunderstanding.
- Different assessments.
- Management tactics.

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A Three-Stage Model Shows Ways to Manage Resistance

1. **Unfreezing**
   - Must recognize **performance gap:** the difference between actual performance and desired performance.
2. Moving
   - **Force-field analysis** involves identifying specific forces that prevent people from changing and specific forces that will drive people toward change.
3. Refreezing
   - Should apply agility and organizational learning to adapt to continuous change.

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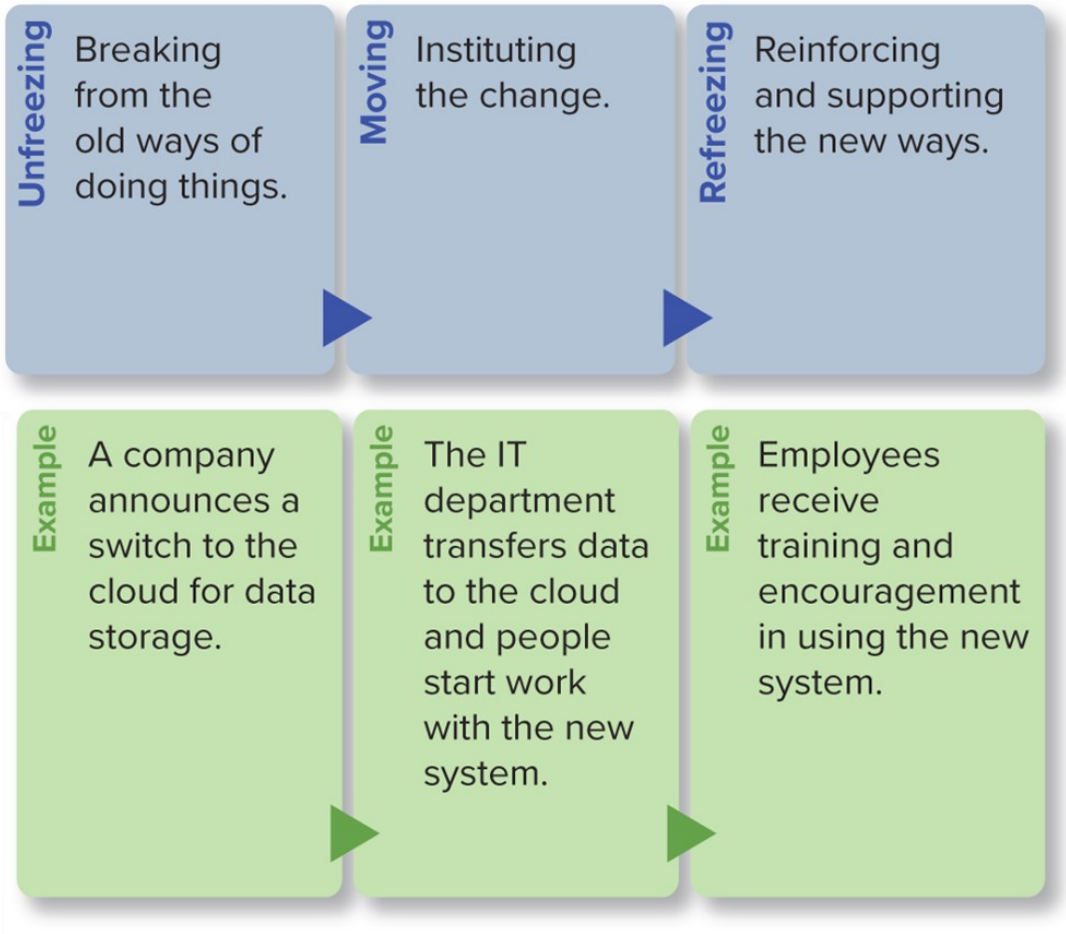
Exhibit 15.8 Motivating People to Change


Unfreezing
Breaking from the old ways of doing things.
Moving
Instituting the change.
Refreezing
Reinforcing and supporting the new ways.
Example
A company announces a switch to the cloud for data storage.
Example
The IT department transfers data to the cloud and people start work with the new system.
Example
Employees receive training and encouragement in using the new system.

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Certain Strategies Enlist Cooperation

Gaining Cooperation

- Use multiple approaches for long-term success.
- Developing true support is better than “driving” a program forward.
- Important to build in stability throughout the change process.
- Announce important things that will *not* change.

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Exhibit 15.9 How to Overcome Resistance to Change

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Harmonize Multiple Changes

Total Organizational Change

- Involves introducing and sustaining multiple policies, practices, and procedures across multiple units and levels.

Questions to ask before change:

- What is the evidence that the approach can really produce positive results?
- Is the approach relevant to your company's strategies and priorities?
- What are the costs and potential benefits?
- Does it really help people add value through their work?
- Does it help the company to better focus on customers and the things they value?

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Managers Must Lead Change Actively

Successful Change

- Requires managers to lead change actively, through these activities.

1. Establishing a sense of urgency
2. Creating the guiding coalition
3. Developing a vision and strategy
4. Communicating the change vision
5. Empowering broad-based action
6. Generating short-term wins
7. Consolidating gains and producing more change
8. Anchoring new approaches in the culture

Exhibit 15.10
Leading Change

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Source: J. P. Kotter, *Leading Change* (Boston: Harvard Business School Publishing, 1996)

Shaping the Future

Types of Change

Reactive: responding to pressure after a problem has arisen.

A better approach is to be proactive:

- Anticipating and preparing for an uncertain future.
- Being a leader and creating the future you want.

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Create the Future

Preparing to Compete

- **Adapters** take the current industry structure and its future evolution as givens and choose where to compete.
- **Shapers** try to change the structure of their industries, creating a future competitive landscape of their own design.

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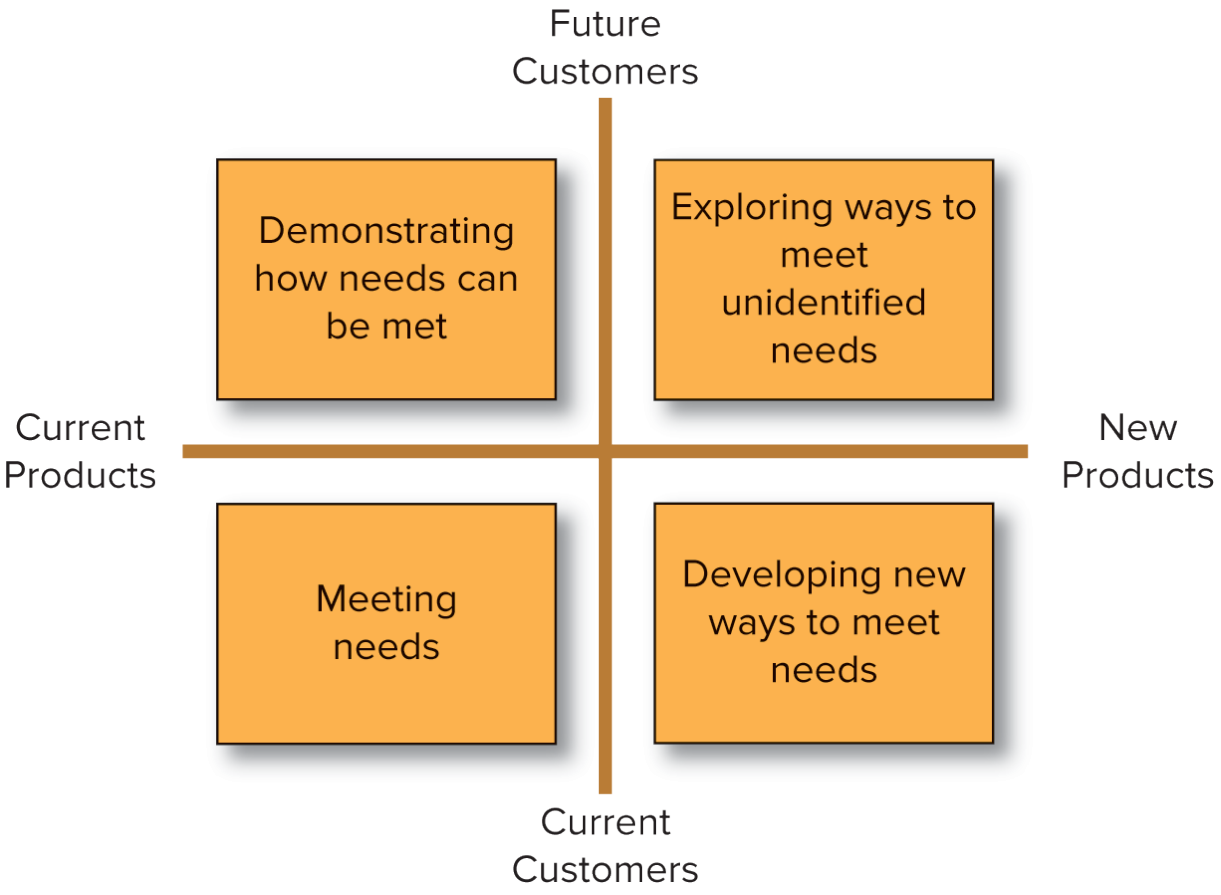
Exhibit 15.11 Opportunity is Finding Ways To Meet Customers' Needs



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Shape Your Own Future

Shaping

To create the future you want, you must set high personal standards. Think about:

- How to exceed expectations.
- How to break free of unimportant, arbitrary or imagined constraints.
- How to seize opportunities.

Consciously and actively manage your own career.

- Develop more skills.
- Become indispensable.
- Maintain your options.

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Exhibit 15.12 Critical Skills You'll Need for the Future

Creativity	Emotional intelligence
Analytical (critical) thinking	Active learning with a growth mindset
Judgment and decision making	Interpersonal communication skills
Leadership skills	Diversity and cultural intelligence
Technology skills	Embracing change

Source: B. Marr, "The 10 Vital Skills You Will Need For The Future of Work," *Forbes*, April 29, 2019, www.forbes.com

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Learn and Lead the Way

Continuous Learning

- People should constantly explore, discover, take action.
- Commit to lifelong learning.
- Lean into the future.

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A Collaborative, Sustainable Future?

Keys to the Future

- Think long term.
- Consider collaboration as key to sustained success.

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Group Challenge

An Impending Reorganization

Chris has been with Drake Manufacturing for five years and was recently promoted to the position of shift supervisor. He is still learning his new position, and it is important to him to be liked and respected. At the most recent operations review meeting, the director reported that the company's financials are troublesome, and managers should be prepared for a major reorganization. Several jobs will be eliminated, but it had not yet determined which departments would be affected.

Chris has the following questions:

- Should he keep the news of the impending change to himself until he is certain how this might affect his employees?
- Should he give his employees "small doses" of the impending change?
- Should he tell his employees what happened so that they can prepare for the change?
- Is there still another approach that he should take?

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Chapter Review

Adopting new technology.

- Disruptive innovation.

Criteria used for technology decisions.

- Market receptiveness, feasibility, viability, organizational fit.

Acquiring new technology.

Elements of an innovative organization.

What does it mean to be world-class?

How to lead change.

- Motivation, leadership, implementers.

Tactics for a successful future.

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